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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,109	08/10/2006	Maurits M.N. Storms	NL040142 US	6039
65913	7550	01/26/2009	EXAMINER	
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			COLE, BRANDON S	
			ART UNIT	PAPER NUMBER
			2816	
			NOTIFICATION DATE	DELIVERY MODE
			01/26/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/589,109

Applicant(s)

STORMS ET AL.

Examiner

BRANDON S. COLE

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on October 29th 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 10th 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is made FINAL in response to the amendments filed on 10/29/2008.

Specification

2. The disclosure is objected to because of the following informalities: The specification fails to label the appropriate section headers (i.e. Background, Summary of the Invention, Detailed Description, etc.). It is requested that Applicant provides the specification with appropriate header so that the specification is clear and easy to follow. Appropriate correction is required.

Claim Objections

3. Claims 12-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Note that claim 12 fails to further limit the voltage driver circuit of claim 1, and claims 13 and 14 depends on claim 12, so these claims also fail to further limit the voltage driver circuit of claim 1.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1 and 6 recite "...during a high voltage operation, there is a substantially zero voltage drop across said relatively lower breakdown voltage driver", and this recitation is not enabled because the specification fails to disclose how the lower breakdown voltage driver has a substantially zero voltage drop across it. The specification only teaches briefly on page 3, lines 20-22 (under the summary of the invention) that during a high voltage operation, there is a substantially zero voltage drop across said relatively lower breakdown voltage driver", but the specification fails to specifically disclose specifically in the detail of discussion of the circuitry (in each of the Figures of the drawings) how or what causes the circuitry can perform the limitation "during a high voltage operation, there is a substantially zero voltage drop across said relatively lower breakdown voltage driver". Thus, one skill in the art cannot made and use the invention.

Claims 2 - 5 and 12 - 14 depend on claim 1 and claims 7-11 depend on claim 6, therefore they are also rejected.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Mentze et al (US 7,030,654).

As to claim 1, Mentze et al figure 1 shows a voltage driver circuit for driving a device at a selected one of a plurality of voltages (High or Low) associated with respective device operations including a high voltage operation (102) and a relatively lower voltage operation (104), the driver circuit comprising an input (Input Signal), a single output (Output Signal) for connection to said device, and a plurality of voltage drivers (102 and 104) between said input and said output including at least one high voltage breakdown driver (102) and at least one relatively lower breakdown voltage driver (104) the circuit being arranged such that, and, during a relatively lower voltage operation, said relatively lower breakdown voltage driver-provides the drive voltage for driving said device, the contribution of said high breakdown voltage driver to said drive voltage during said relatively lower voltage operation being substantially negligible. Note that, for the functional limitation "during a high voltage operation, said high voltage breakdown driver-is connected to said output and there is a substantially zero voltage drop across said relatively lower breakdown voltage driver" recited in claim 1, because the structure of the claim is fully, so the operation of the circuitry in Mentze also meets all the functional limitation (see MPEP 2114, and In re Schreiber, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997)).

As to claim 2, Mentze et al figure 1 shows a circuit according claim 1, wherein the high voltage breakdown driver(s) comprise of an inverter consisting of high voltage breakdown transistors. Mentze et al teaches in column 2, lines 9 –10 that the high voltage buffer stage comprises of an inverter. It is obvious to someone having ordinary skill in the art that an inverter is made of two transistors (Wikipedia – Inverter (Logic Gate)) and it would be obvious that the transistors are designated to handle a high voltage because in the reference they are attached to a high voltage.

As to claim 3, Mentze et al figure 2 shows a circuit according to claim 1, wherein the at least one relatively lower breakdown voltage driver comprises of an inverter consisting of relatively lower breakdown voltage transistors (220, 222). It is obvious to someone having ordinary skill in the art that an inverter is made of two transistors (Wikipedia – Inverter Logic Gate) and it would be obvious that the transistors are designated to handle a low voltage because in the reference they are attached to a low voltage.

As to claim 4, Mentze et al figure 1 shows a circuit according to claim 1 comprising two signal paths between the input and the output, a first signal path consisting of one or more high voltage drivers (102) connected in series, and a second signal path consisting of at least one low voltage driver (104), the first and second signal paths being connected in parallel to one another.

As to claim 5, Mentze et al figure 1 shows a circuit according to claim 1 comprising a means for selecting the first signal path during high voltage operation. Mentze et al teaches column 3, lines 24 – 27 that input signal resides between two logic levels (Wikipedia - Clock Signal) so that when the logic level is high the first signal path is selected.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentze et al (US 7,030,654) in view of Parkinson (US 5,889,415).

As to claim 6, Mentze et al figure 1 shows a voltage driver circuit for driving a device at a selected one of a plurality of voltages associated with respective device operations including a high voltage operation (102) and a relatively lower voltage operation (103), the driver circuit comprising an input (Input Signal), a single output (Output Signal) for connection to said device, and a plurality of voltage drivers (102 and 104) between said input and said output including at least one high voltage breakdown driver (102) and at least one relatively lower breakdown voltage driver (104), the high breakdown voltage driver comprising a voltage level shifter (208, 210, 212, and 214 of figure 2) which is connected at the input of the circuit between first and second voltage lines (VddH and Ground of figure 2), the output of said level shifter is the output of the high voltage breakdown driver, and the lower breakdown voltage driver is connected to the said first and second voltage lines (VddH and Ground of figure 2). Mentze et al teaches about the level shifter in column 4, lines 35 – 57.

Mentze et al fails to show that the output of high voltage breakdown driver is connected to the input of a relatively lower breakdown voltage. However, Parkinson figure 1 shows at high voltage operation (114) with its output (112) being the input of a relatively lower voltage operation (116). Parkinson teaches column 1, lines 20 - 23 that the driver uses a mixed voltage supply and that Vcc2 is the lower voltage.

Therefore it would have been obvious to one having ordinary skill in the art, at the time of the invention, connect Mentze et al's high voltage operation to its relatively lower voltage operation just like how Parkinson's high voltage operation is connected to its relatively lower voltage operation, with the output of the high voltage operation being the input of a relatively lower voltage operation, for purpose of the not having the high voltage device damage the low voltage device.

Note that, for the functional limitation "during a high voltage operation, said high voltage breakdown driver-is connected to said output and there is a substantially zero voltage drop across said relatively lower breakdown voltage driver" recited in the claim, because the structure of the claim is fully, so the operation of the circuitry in the above combination also meets all the functional limitation (see MPEP 2114, and In re Schreiber, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997)).

As to claim 7, Mentze et al figure 2 shows that the voltage level shifter comprises of a partial level shifter (208, 210, 212, and 214). The level shifter is partial because it only connects to VddH and VddL, it cannot support the full voltage drop of VDDH to Ground.

As to claim 11, Mentze et al figure 2 shows a high voltage pull-up transistor (208) that is provided between the first voltage line (VddH)

11. Claims 8 -10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mentze et al (US 7,030,654) as modified by Parkinson (US 5,889,415) and applied to claim 6 above, and in further view of Chen et al (US 7,193,441).

As to claims 8 and 9, Mentze et al figure 2 further shows a relatively lower breakdown voltage (104a) comprising of an inverter (220, 222).

Mentze et al fails to show that the inverter consisting of thick gate oxide devices (GO_2 is the same thing as a thick gate oxide device (Taught in Schoellkopf et al (US 2006/0054952) paragraph [0060])).

However, Chen et al teaches in column 3, lines 27 – 36 that inverter connected to the input signal utilize thick gate oxide layer to protect to prevent gate oxide breakdown.

Therefore, it would have been obvious for one having ordinary skill in the art, at the time of the invention, to use Chen et al's inverters in place of Mentze et al's inverters with the purpose of preventing gate oxide breakdown.

Claim 10 has similar limitations as to claim 8 above (the thick oxide layer protects the input inverter). Therefore, the claim is rejected for the same reasons.

12. Claims 12 -14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mentze et al (US 7,030,654), as applied to claim 1 above, and in further view of Rhee (US 2001/0000949).

As to claims 12 and 13 Mentze et al fails to teach that the voltage driver circuit is part of memory device.

However, Rhee figure 5 teaches in paragraph [0011] that the driver circuit is used in an integrated circuit memory device.

Therefore it would have been obvious to one having ordinary skill in the art, at the time of the invention to use Mentze et al's voltage driver circuit in a integrated circuit memory device for the purpose of accounting for variations in loading of the memory device.

Claim 14 has similar limitations as to claim 13 above (an integrated circuit is a type of a computing system (Wikipedia – Integrated Circuits)). Therefore, the claim is rejected for the same reasons.

Response to Arguments

13. Applicant's arguments filed 10/29/2008 have been fully considered but they are not persuasive.

Regard to the 35 U.S.C. 112, 1st paragraph rejection that the limitation "during a high voltage operation, there is a substantially zero voltage drop across said relatively lower breakdown voltage driver" is not enabled because the specification fails to disclose how the lower breakdown voltage driver has a substantially zero voltage drop across it. Note that, the specification only teaches briefly on page 3, lines 20-22 (under the summary of the invention) that during a high voltage operation, there is a substantially zero voltage drop across said relatively lower breakdown voltage driver", but the specification fails to specifically disclose specifically in the detail of discussion of the circuitry (in each of the Figures of the drawings) how or what causes the circuitry can perform the limitation "during a high voltage operation,

there is a substantially zero voltage drop across said relatively lower breakdown voltage driver". Thus, one skill in the art cannot make and use the invention.

Mentze et al figure 2 shows that the lower breakdown voltage driver (220,222) comprises of an inverter as does the applicant's lower breakdown voltage driver, therefore it is an inherent characteristic that Mentze et al has a substantially zero voltage drop across said relatively lower breakdown voltage driver during a high voltage operation. Note that, for the functional limitation "during a high voltage operation, said high voltage breakdown driver-is connected to said output and there is a substantially zero voltage drop across said relatively lower breakdown voltage driver" recited in claim 1, because the structure of the claim is fully, so the operation of the circuitry in Mentze also meets all the functional limitation (see MPEP 2114, and In re Schreiber, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997)).

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON S. COLE whose telephone number is (571)270-5075. The examiner can normally be reached on Mon - Fri 7:30-5:00 EST (Alternate Friday's Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Long Nguyen/
Primary Examiner, Art Unit 2816

/Brandon S Cole/
Examiner, Art Unit 2816